

SELECT BOARD MEETING AGENDA

DATE: 6:00pm Monday, December 23, 2013

HELD: Public Safety Complex (2nd Floor Meeting Room) 20 George Bennett Rd, Lee

The Select Board reserves the right to make changes as deemed necessary during the meeting. Please limit your speaking time to 15 minutes.

1. Call to Order - 6:00 pm
2. Public Comment
3. **Caren Rossi, Planning & Zoning Administrator – New Road Name**
Request that the Board approve a name for the street off Calef Highway located on Jim Daley's property. Planning & Zoning is presenting 3 names for consideration.
4. **Roger Rice, Transfer Station Manager - New Solid Waste Ordinance**
Final Review of the revised Solid Waste Ordinance for 2014 Warrant Article
5. **Roger Rice, Transfer Station Manager – Loader Tires Revised Purchase Request**
Make new recommendation for the purchase of loader tires.
6. **Budget Discussion**
 - Fire Department
 - Library
 - Warrant Article for Contingency Fund
 - General
7. **Town Administrator's Report**
 - Surplus Cruiser – vehicle for Fire Chief
 - Miscellaneous
8. **Consent Agenda Items** - (Individual items may be removed by any Selectman for separate discussion and vote)

[SIGNATURES REQUIRED](#)

[INFORMATION ONLY](#)

Rumble Strips/Stripes Guidelines for Installation

9. **Acceptance of Minutes – Minutes from December 2, 2013**
10. **Acceptance of Minutes – Minutes and Non Public Minutes from December 9, 2013**
11. **Acceptance of Minutes – Minutes from December 16, 2013**
12. **Acceptance of Manifest #12 and Weeks Payroll Ending December 22, 2013**
13. **Miscellaneous/Unfinished Business**
14. **Non-Public**
 - a. **RSA 91- A:3 II (a) – Personnel Issues**
15. **Adjournment**

Posted: Town Hall, Public Safety Complex, Public Library and on leenh.org on December 20, 2013 at 12:00 pm

Individuals needing assistance or auxiliary communication equipment due to sensory impairment or other disabilities should contact the Town Office at 659-5414. Please notify the town six days prior to any meeting so we are able to meet your needs.



TOWN of LEE
7 MAST RD, LEE, NH 03861
(603) 659-5414

Office Use Only

Meeting Date: Dec 23, 2013

Agenda Item No. 1

BOARD OF SELECTMEN
MEETING AGENDA REQUEST
12/23/2013

Agenda Item Title: New Road Name

Requested By: Caren Rossi, Planning & Zoning Administrator **Date: 12/19/2013**

Contact Information: 603-659-5783

Presented By: Caren Rossi, Planning & Zoning Administrator

Description: Request that the Board approve a name for the street off Calef Highway located on Jim Daley's property. Planning & Zoning is presenting 3 names for consideration.

Financial Details:

Legal Authority 231:133 Names; Changes; Signs. –

I. In all towns, cities, and those village districts which maintain public highways, every highway and street under the control of the town, city, or village district shall have a name which shall be given it by the governing body. Said name shall be legibly marked on a suitable signboard or other marker and placed in at least 2 conspicuous places on said street. The governing body may change the name of any such street or highway at any time when in its judgment there is occasion for so doing. The governing body may change the name of a private street or highway when the name change is necessary to conform to the requirements of the enhanced 911 telecommunications system. In towns and village districts the governing body may at its discretion provide for public hearing and submit such names for approval at any meeting of the legislative body, and voters may submit a petitioned warrant article for such a name change under the procedure of RSA 39:3.

II. The naming of any new street or highway shall form a part of the return of the layout of the street or highway, or of the acceptance of any dedicated way. The municipality shall not be bound by any name previously assigned to the street or highway by any private owner, developer, or dedicator. No name for a highway or street shall be selected which is already in use, or which is confusingly similar to any such existing name, or which otherwise might delay the locating of any address in an emergency.

III. Whenever a name is assigned to any new street or highway, or a change is made in the name of any street or highway, the governing body shall make a return of the same to the town, city, or village district clerk, who shall make a record of the new name or name change, and shall forward a copy of such record to the commissioner of transportation.

Source. 1911, 79:1. PL 93:5. RL 109:5. 1945, 188:1, part 21:1. RSA 251:1. 1981, 87:1. 1991, 53:1. 2005, 113:1, eff. Aug. 14, 2005.

REQUESTED ACTION OR RECOMMENDATIONS:

MOTION: Move to accept the recommendation of the Planning & Zoning Administrator and name the street located at Map 11 Lot 10-1 as _____

IMPORTANT FAX MESSAGE
FROM: SULLIVAN TIRE CO.

TO: _____ Roger Rice _____

FAX #: _____ 603-659-7002 _____

DATE: _____ 12-20-13 _____

RE: _____

4-17.5RX25 Bridgestone VUT	\$1375.00 each
4-O RINGS	\$18.00 each
4- valves	\$12.00 each
Road Service	\$500.00
TOTAL	\$6,120.00

John Q cell 603-440-3018

~~RE DYLE~~
~~603-234-4700 (TEL)~~

	FY 2013		FY 2014		FY 2015			
	Budget	Actual	Budget	Actual	Dept. Request	ABC Recommend	Add/Sub	New Request
				7/1/2013 - 11/30/2013				
4220 - Fire Department								
4220-S1 - Fire Chief Salary	14,297.00	14,296.36	14,297.00	5,773.53	14,297.00	14,297.00		
4220-S2 - Deputy Salary	7,682.00	7,681.52	7,682.00	1,920.38	7,682.00	7,682.00		
4220-W1 - Captain Wages	44,061.00	42,635.34	45,163.00	17,932.47	45,163.00	45,163.00		
4220-W2 - Lieutenant Wages	35,249.00	33,845.64	36,131.00	13,907.82	36,131.00	36,131.00		
4220-W3 - Paid Call Wages	37,000.00	22,594.54	37,000.00	11,212.90	47,000.00	47,000.00	-10,000.00	37,000.00
4220-W4 - Full Time Firefighter	0.00	0.00	0.00	0.00	38,000.00	38,000.00		
4220-W7 - Overtime	4,000.00	2,732.24	2,050.00	749.12	3,000.00	3,000.00		
4220-W8 - Holiday	3,000.00	2,202.72	3,000.00	781.56	3,000.00	3,000.00		
4220-W9 - Incentive Pay	0.00	4,775.00	13,000.00	4,675.00	18,000.00	18,000.00		
4220-03 - Equip. Maint. Agreements	500.00	6,703.57	5,000.00	6,538.80	9,000.00	9,000.00		
4220-04 - Printing	100.00	0.00	100.00	0.00	100.00	100.00		
4220-05 - Postage	60.00	6.40	50.00	0.00	50.00	50.00		
4220-06 - Dues/Subscriptions	4,000.00	2,744.60	5,000.00	1,425.50	5,000.00	5,000.00		
4220-09 - Office Supplies	500.00	1,736.74	1,000.00	140.22	2,000.00	2,000.00		
4220-10 - Supplies - Other	500.00	795.98	3,000.00	294.62	3,000.00	3,000.00	-1000.00	2,000.00
4220-12 - Conference/Travel	0.00	57.94	0.00	0.00				
4220-13 - Special Events	500.00	0.00	300.00	312.82	500.00	500.00		
4220-14 - Training	5,000.00	2,645.83	5,000.00	1,266.69	5,000.00	5,000.00		
4220-15 - Uniforms	1,200.00	312.88	1,000.00	0.00	1,000.00	1,000.00		
4220-16 - Equipment Repairs/Parts	8,500.00	7,924.34	6,000.00	1,005.92	8,500.00	8,500.00		
4220-17 - New Equipment	15,000.00	5,961.70	15,000.00	597.82	15,000.00	15,000.00		
4220-18 - Electricity	10,500.00	8,132.25	10,500.00	3,439.52	10,500.00	10,500.00		
4220-19 - Heat	8,000.00	8,125.70	8,000.00	685.28	8,500.00	8,500.00		
4220-21 - Bottled Water	500.00	469.16	650.00	137.53	650.00	650.00		
4220-22 - Alarms	0.00	0.00	0.00	0.00	0.00	0.00		
4220-24 - Gas/Oil/Fuel	0.00	0.00	500.00	0.00	200.00	200.00		
4220-25 - Diesel Fuel	5,500.00	-1,984.76	7,000.00	1,306.12	7,500.00	7,500.00		
4220-26 - Vehicle M & R	8,000.00	6,953.31	5,000.00	38.28	8,000.00	8,000.00		

4220-27 · Radio Repair	2,500.00	429.00	2,500.00	0.00	2,500.00	2,500.00	2,500.00	13
4220-28 · Miscellaneous/Other	0.00	7.60	0.00	74.90	0.00	0.00	0.00	
4220-30 · Telephone	6,150.00	4,342.28	5,250.00		5,000.00	5,000.00		
4220-40 · Medical Supplies	4,000.00	451.37	3,000.00	740.27	3,000.00	3,000.00	3,000.00	14
4220-41 · Fire Prevention Safety	1,500.00	145.80	1,000.00	0.00	1,000.00	1,000.00	1,000.00	
4220-42 · Personal Protective Equip.	10,000.00	1,467.59	10,000.00	1,021.89	10,000.00	10,000.00	10,000.00	15
Total 4220 · Fire Department	237,799.00	188,192.64	253,173.00	75,978.96	318,273.00	-10,000.00	308,273.00	

-1,000.00

2,000.00

Lee Fire & Rescue

Budget FY 2015 Explanation

1) 4220-W3 Paid Call Wages

- a) This line was raised due to the increase in call volume from FY 2012 of 480 calls to FY 2013 of 493 calls with a projection of 591 for FY 2014. This is an average of 1.6 calls a day. The fire department has seen a recent increase in personnel and an increase in average of personnel turnout on calls, costing the department more in wages. With the lower call volume and lower average of personnel turnout on calls in past years we have not yet exhausted the monetary resources of this line item. It is my opinion that this line item may stay at \$37,000.00. I would advise the Board that we cannot predict the call volume or personnel hours but, if the trends of rising call volume or a natural disaster such as the floods or ice storm in the past, the department will be asking the Board for funding elsewhere to compensate the personnel.

2) 4220-W9 Incentive Pay

- a) This line was raised to increase the nighttime coverage from 12pm-6am Monday through Friday with additional hours of 12pm-6am Saturday and Sunday. This plan has been very effective and with the recent addition of personnel receiving their certifications and addition of new personnel the department is seeing an increase of participation.

3) 4220-03 Equipment Maintenance Agreements

- a) This line reflects the recommendations by Property Liability Trust to ensure compliance with NFPA mandates for testing all equipment.

Vendors	Item	Cost
IPS	SCBA Testing	\$1,000.00
IPS	Air Compressor	\$600.00
IPS	Holmatro Extrication Tool	\$700.00
Maine Oxy	Oxygen Cascade	\$180.00
Air Gas	Nitrogen	\$90.00
Failsafe	Hose Testing	\$3,500.00
Failsafe	Ladder Testing	\$500.00
NFA	Pump Testing	\$1,100.00
ASAP	Fire Extinguishers	\$300.00
	Total	\$7970.00

4) 4220-04 Printing

- a) This line item would be used for newspaper advertisements or flyers/brochures for recruitment drives.

5) 4220-05 Postage

- a) This line item would be used for the recruitment drive and letters, request for reports, and any other business mailings

6) 4220-06 Dues/Subscriptions

- a) This line item is used for dues for the department to be members of groups such as Seacoast Chief Fire Officer Mutual Aid District, New Hampshire Firemen’s Association, New Hampshire Fire Chiefs Association, Interstate Emergency Unit, New Hampshire Retirement System, and National Fire Protection Association. Also, it includes the maintenance agreement with ACS for our Firehouse Software program which covers any technical support and software updates. SCBA Dues pays for the maintenance and testing of the three SCBA trailers. We also pay for a NFPA codes subscription. We have spoken to NFPA about a town-wide account to include Planning and Zoning Department, but each department must have their own subscription. To receive a discounted price we also pay dues to be members of NFPA. The department requests to keep the line at \$5,000.00 for any increases from agencies.

Agency	Dues/Subscription	Cost
SCFOMAD	Dues	\$250.00
SCFOMAD	SCBA Dues	\$180.00
SCFOMAD	START Dues	\$1,200.00
ACS	Main. Agreement/Subscription	\$700.00
NHFCA	Dues	\$75.00
NHFA	Dues	\$50.00
IEU	Dues	\$250.00
NHRS	Dues	\$200.00
NFPA	Dues/ Subscription	\$1,200.00
	Total	\$4,105.00

7) 4220-09 Office Supplies

- a) This line item takes into account increased office supply requirements as this was exceeded in FY2013. The department’s printer ink cartridges are purchased out of this line item. They are cost \$300 each and the printer has 4 cartridges.

8) 4220-10 Supplies-Other

- a) This line item is used for station supplies such as cleaning supplies for the apparatus, the bay area, paint, and speedy dry for use at car accidents.

9) 4220-15 Uniforms

- a) This line item is used for uniforms for the full time staff. This has been increased due to the addition of the third firefighter position. The following is the uniform cost for one staff member:

Item	Quantity	Cost (each)	Total
Pants	5	\$40.00	\$200.00
Hi Vis Jacket	1	\$300.00	\$300.00

Reuben Sweatshirt	1	\$50.00	\$50.00
T-shirts	5	\$7.00	\$35.00
Polo Shirt	3	\$40.00	\$120.00
Station Boots	1	\$125.00	\$125.00
		Total	\$830.00

10) 4220-16 Equipment Repairs/Parts

- a) This line item has been increased to accommodate the age of several pieces of equipment and their continued use at incidents and training. SCBA repairs come out of this line item and a recent SCBA cost \$881.38 to repair. Other items such as cascade systems (hydro-\$500.00), chainsaws, K12 saw, flashlights, nozzles, gas meter (sensor-\$100.00), and generators are repaired from this line item.

11) 4220-17 New Equipment

- a) This line item covers new purchases for equipment such as Pagers (\$385.00 Warranty-\$80.00), hose (\$125.00-\$435.00), chargers for pagers (\$40.00) and radios (\$630.00). With the department hose testing every year we are finding problems that remove hose from our inventory and have spent \$4,147 for new hose over the past few years. Other items have been extinguishers, power tools, tarps, gas meter, and firefighting hand tools such as halligans (\$200.00) and pike poles (\$100.00). A future item that the department is looking to purchase is an Air Bag system which would greatly assist us on motor vehicle accidents and extrications of patients. (\$6,000.00-\$10,000.00).

12) 4220-26 Vehicle Maintenance and Repair

- a) This line item covers the cost to repair our apparatus. Inspections of our apparatus in FY 2013 resulted in \$4152.56 in repairs. Currently, we have other items that need to be addressed: in FY 2015 we will need to replace Engine 2's front tires (\$1,000.00 each) and Utility 1's tires (\$1,600.00) as well as any unforeseen deficiencies in our apparatus that could inhibit our ability to deliver quality service.

13) 4220-27 Radio Repair

- a) This line item covers the cost to repair our pagers and radios. We purchase 4-year warranty plans for the pagers. Currently a high percentage of pagers are out of warranty and the repairs will be more expensive. Also, we have a need to purchase new radio batteries. Each battery lasts roughly 2 years or 200 charges. Our current stock, more than 25 batteries, is 4 years old, 400 charges and does not hold a charge.

14) 4220-40 Medical Supplies

- a) This line item is for the purchase of medical supplies. Currently we have sufficient stock of our common supplies. I do not see any big purchases for this line item. I have reduced it by \$1,000.00.

15) 4220-42 Personal Protective Equipment

- a) This line item is for the purchase of new personal protective equipment. In FY 2012 the cost of a jacket and set of pants was \$1,397.00. This does not include helmet, gloves, hood, and boots. To outfit a new firefighter the cost is \$2,003.00. We do have stock of some of these items that are not being used that we can utilize to save money. My concern is that we have underspent this line item and our personal protective equipment is reaching close to 10 years old. The NFPA recommendation is for personal protective equipment to be replaced every 10 years no matter what condition it is in.



Save for Dec 23
Budget Hearing

TOWN of LEE
7 MAST RD, LEE, NH 03861
(603) 659-5414

Office Use Only
Meeting Date: Dec 23, 2013
Agenda Item No. 6

**BOARD OF SELECTMEN
MEETING AGENDA REQUEST**

Meeting Date Requested

Agenda Item Title: Budget FY 2015 Contingency Fund

Requested By: Julie Glover

Date: 12/9/2013

Contact Information:

Presented By: Julie Glover

Description: Establish WA for Contingency Fund FY 2015

Financial Details: \$34,298.37

Legal Authority HB134 August 24, 2013 amending RSA 32:11 and adding a section to RSA 31:98-a

Legal Opinion: see attached

REQUESTED ACTION OR RECOMMENDATIONS:

Ask the voters to approve the establishment of a contingency fund of \$34,298.00 for FY 2015.

FY 2014 operating budget (which excludes capital expenditures)	\$3,555,732.00
Less debt service	126,826.50
Total	3,429,836.50
	1%
	\$32,298.00

Amended: RSA 32:5-b

House Bill 115 (Chapter 114, Laws of 2013) modifies the procedure for filling a vacancy on a cooperative school district budget committee. Under the new law, in a cooperative school district, the remaining budget committee members representing the same town or towns as the departed member shall fill a vacancy on the budget committee, provided that there are at least two such members. If there are less than two remaining members on the budget committee representing the same town or towns as the departed member, or if the remaining members are unable, by majority vote, to agree upon an appointment, the selectmen of the town or towns involved shall fill the vacancy by majority vote in convention. If the selectmen are unable to fill the vacancy then the cooperative school district moderator shall make the appointment.

If the vacancy is for the cooperative school board representative to the cooperative school district budget committee, such vacancy shall be filled by the cooperative school board. A member appointed to fill a vacancy shall serve until the next district election when the voters of the district shall elect a replacement for the unexpired term.

Effective: August 24, 2013

Amended: RSA 671:33, IV

House Bill 126 (Chapter 9, Laws of 2013) amends the existing law that allows a town, by vote of the legislative body, to establish a revolving fund to maintain as well as facilitate or encourage recycling programs.

Effective: July 6, 2013

Amended: RSA 31:95-h, I(a)

House Bill 134 (Chapter 115, Laws of 2013) permits towns to establish contingency funds for unanticipated expenses and to make expenditures from such funds. Under the new law, if the legislative body has, by warrant article, established a contingency fund in the annual budget for the purpose of unanticipated expenses, the board of selectmen may expend funds from such account to meet the costs of such expenses. The contingency fund may not exceed 1% of the amount appropriated by the town for town purposes during the preceding year, excluding capital expenditures and the amortization of debt. The new law also requires a detailed report of all expenditures from the contingency fund to be made, annually, by the selectmen and published with their report.

Effective: August 24, 2013

Amended: RSA 32:11 and new section RSA 31:98-a.

House Bill 138 (Chapter 116, Laws of 2013) allows any political subdivision that has adopted the official ballot referendum form of meeting to use a topical description of the substance of a ordinance or amendment on the official ballot for adoption instead of the full text of the ordinance or amendment.

Effective: August 24, 2013

Amended: RSA 40:13, VI, new paragraph RSA 40:13, VII-a and VIII-a.

STATE OF NEW HAMPSHIRE
INTRA-DEPARTMENT COMMUNICATION

FROM: William J. Oldenburg, P.E. ^{WJO}
Administrator

DATE: November 1, 2013
AT (OFFICE): Bureau of Highway Design

SUBJECT: REVISED Guidelines for the Installation of Milled Rumble Strips

TO: Department Bureaus
Department Consultants

MEMORANDUM

Transmitted herewith is a copy of the recently revised "Guidelines for the Installation of Milled Rumble Strips on New Hampshire Highways", dated September 9, 2013. It was noted that the previous rumble strip installation guidelines unnecessarily limited the use of rumble strips on roadways that would otherwise be good candidates for their use and the revisions allow for a more systemic approach to installations statewide. The intent of this document is to provide the Department's designers and contract administrators with guidance in the placement of rumble strips along the shoulders and centerlines of New Hampshire roadways. The current Standards will be revised to reflect these new guidelines.

The revised Guidelines were developed with input from the Bureaus of Highway Design, Construction, Traffic, Highway Maintenance, Rail & Transit, Environment, and the Federal Highway Administration. It is the intent to implement this guidance immediately into roadway projects and post this document on the NHDOT Internet website.

Please contact me with any questions you may have regarding this issue.

NEW HAMPSHIRE DEPARTMENT OF TRANSPORTATION

RUMBLE STRIP INSTALLATION GUIDELINES

The following are guidelines established for the use of milled rumble strips/stripes along New Hampshire roadways. Run off the road (ROR) crashes and head-on collisions due to fatigued, inattentive, or otherwise impaired drivers are a major contributor to New Hampshire's fatal and injury crashes. Rumble strips are placed as a countermeasure for driver error, rather than roadway deficiencies. Milled shoulder rumble strips/stripes and milled centerline rumble strips (CRS) provide low-cost highly effective safety solutions that alert drivers when they drift from their travel lane, providing an opportunity for the driver to maneuver their vehicle back into the proper travel way. Another benefit of shoulder rumble strips/stripes is that they alert pedestrians and bicyclists of possible danger from errant vehicles that leave the travel way and enter the shoulder area. Because of their proven significant safety benefits at a relatively low cost (NCHRP Synthesis Report 641), a project specific cost to benefit analysis will not be required for these countermeasures to be Highway Safety Improvement Program funded.

General Design Guidelines for the Installation of Milled Rumble Strips/Stripes on New Hampshire Highways

Milled Shoulder Rumble Strips (SRS) will be installed on all Interstate Highways, and similarly Limited Access divided highways to reduce the number of run off the road crashes. Milled SRS should also be considered on roadway segments and corridors with the following characteristics:

1. Posted speed limit of 40 MPH or greater.
2. Minimum of 6' wide shoulders.

Rumble "Stripes" will generally not be installed on Interstate or similar Limited Access highways, but may be used on median side shoulders or other facility types where determined advantageous by the Department.

- Milled Centerline Rumble Strips/Stripes (CRS/S) will be considered on an individual project-by-project basis to reduce the number of crossing the centerline road crashes. Milled CRS/S should be considered on roadway segments and corridors with the following characteristics:

1. Posted speed limit of 40 MPH or greater.
2. Pavement width of 28' or greater
3. Existing pavement in good condition and minimum wearing course depth of 1 ¼ inches (so that the installation of CRS will not accelerate pavement delamination and deterioration of the centerline pavement joint).

A public informational meeting will be held within the affected communities.

Specific Design Guidelines for the Installation of Milled Rumble Strips/Stripes on New Hampshire Highways

Installation procedures for Milled Shoulder Rumble Strips (SRS) on Interstate and similarly Limited Access divided highways:

Right Side Shoulders

- Depth shall be 1/2 inch
- Width shall be 16"
- Location shall be 30" from the outside of the edge line
- SRS shall not be installed on bridge decks.
- Terminate SRS 30' before at grade bridges and begin them 30' after. (This eliminates conflicts with at grade approach slabs.)
- Install SRS on fill over bridge structures

Ramp starting and stopping locations

Off ramps: Terminate SRS when the shoulder either gets narrower than 6' or at the beginning of the concrete nose

Mainline: Begin at concrete nose for off ramp
Terminate at end of concrete nose for on ramp

On ramps: Begin at end of the concrete nose as long as the shoulder is wider than 6' throughout the length of the acceleration lane

Note: At cloverleaf interchanges that have high volume and the acceleration lane is also the deceleration lane, consideration should be given to start the SRS 500' to 1000' beyond the off ramp nose

Note: If the ramp continues as a multi-lane roadway beyond the nose, consideration should be given during the design phase to extend SRS beyond the nose.

Left Side Shoulders (Median side)

- Depth shall be 1/2 inch
- Width shall be 16"
- Location shall be directly beneath the edge line with the remaining 10" extending into the shoulder area.

Median Crossovers (Starting and Stopping locations)

- When SRS are 30" off the edge line (shoulders greater than 6') terminate SRS 50' before and begin SRS 50' after.
- When the SRS are 6" off the edge line (shoulders 6' & less) terminate SRS 130' before and begin SRS 50' after.

Installation procedures for Milled Shoulder Rumble Strips/Stripes and Centerline Rumble Strips/Stripes on NHS and other undivided 2-lane or 4-lane roadways:

Shoulder Rumble Strips/Stripes (SRS)

- Depth shall be 1/2 inch
- Width shall be 12"
- Location shall be either 12" from the outside of the edge line or directly beneath the edge line with the remaining 8" extending into the shoulder area
- Where bicycle traffic is anticipated;
 - Provide a minimum 4' clear area from rumble strip/stripe to edge of pavement.

- Provide a minimum 5' clear area from rumble strip/stripe where vertical obstructions are present (guardrail & curbing).
- Provide gaps of 12' in the shoulder rumble strips/stripes every 48' unless other breaks for major drives or sideroads are provided.

Intersections, drives and climbing lanes – starting and stopping locations

- If the highway has on and off ramps, terminate SRS at the edge line taper point
- Where right turn lanes exist – terminate at the beginning of the edge line taper of the turn lane
- Where no right turn lane exists - terminate SRS 300' before pavement radius of the side road
- Where no left turn lane exists (but many vehicles make this movement), terminate SRS 300' before the pavement radius of the side road.
- Begin SRS 150' after the radius of the side road
- At major commercial drives, use the guidelines noted above
- SRS will run by single resident & field driveways
- For truck climbing lanes, terminate SRS at the beginning of the edge line taper, unless the shoulder maintains a minimum width of 8'. Begin SRS when the edge line tapers back to normal and the shoulder has a minimum width of 8'.
- SRS will not be placed on segments of roadway that have more than 5 side roads and/or major commercial drives in a one-mile segment.

Note: Design should also take into consideration whether they should be installed in residential areas.

Centerline Rumble Strips/Stripes (CRS)

- Depth shall be 1/2 inch (passing zones included)
- Width shall be 12"
- Location shall be directly under the centerline

Intersections with no turn lanes or painted islands - starting and stopping locations

- Terminate CRS 25' before the end of the double yellow centerline
- Begin CRS 25' after start of the double yellow centerline

Intersections with raised islands - starting and stopping locations

- When approaching an island and at the point where the double yellow lines diverge, the CRS shall continue along the left double yellow line and terminate 25' before the end of the double yellow. If the double yellow becomes a single yellow terminate 25' before that point

Intersections with left turn lanes - starting and stopping locations

- Terminate CRS 25' before the end of the double yellow.
- Begin CRS 25' after the start of the double yellow.

Intersections with Painted Islands - starting and stopping locations

- At the point where the painted island starts (double yellow lines diverge), CRS shall only continue along the left double yellow line and terminate 25' before the end of the double yellow.

Installation procedures for Milled Transverse Rumble Strips:

- Rumble strips shall have a finished dimension of 4 inches (+/- ½ inch) wide in the direction of travel and a minimum of 11 feet long measured perpendicular to the direction of travel. The depressions shall have a trapezoidal shape with a maximum 3/8 inch depth. Rumble strips shall be placed in relation to the roadway according to the patterns shown on the plan.



Bike-Walk Alliance of New Hampshire

57 Regional Drive, Suite 6 ♦ Concord, NH 03301-8518
www.bwanh.org ♦ info@bwanh.org ♦ 603.898.9926

"A Voice for New Hampshire's Bicyclists and Pedestrians"

June 28, 2013

Mr. Ronald Grandmaison, Project Manager
NH-DOT Bureau of Highway Design
7 Hazen Drive
Concord, NH 03302

Re: Rumble strip policy recommendation

Dear Mr. Grandmaison:

As a member of the NHDOT Bicycle and Pedestrian Transportation Advisory Committee (BPTAC) assigned to review rumble strip design effects concerning bicycling, I would like to thank you for the opportunity to review the NHDOT policy on this important subject. While rumble strips create new challenges for cyclists, the Committee recognizes that rumble strips are a cost-effective method to reduce Run off Road (ROR) crashes of motor vehicles by approximately 60%. Therefore, the Committee has the following recommendations in order to minimize the negative affects of lateral pavement grooves.

1. Shoulder Rumble Strips can be bicycle tolerable if implemented with bicycling in mind. Rumble "stripes" are recommended over rumble "strips." In addition to decreasing the negative effects for bicyclists, households along the road benefit because noise generated by motorists encountering a rumble **stripe** is less than the noise generated by a motorist encountering a rumble **strip**.
2. On roads where bicycles are legal vehicles, the remaining ride-able shoulder width should be four feet, five if adjacent to a fixed object like a curb, guardrail, wall, building, etc.
3. Shoulder Rumble Stripes starting under the white reflective paint of the right-hand lane edge line (or "fog line") and extending into the paved shoulder are considered the best location. Wide rumble strips of 16" in the center of the shoulder area should never be used where bicycles are legal vehicles on the highway. Typical width of milled "bicycle tolerable" rumble stripes is 5 to 7 inches.

4. Shoulder Rumble Stripes may vary in length along a given road from 6" to 16" in order to maintain a "ride-able shoulder" of at least four feet. A 12" length is typical. In some cases, exceptions for short distances allowed the "ride-able shoulder" to be reduced to three feet. No Shoulder Rumble Stripes should be installed if the bare minimum of a three-foot "ride-able shoulder" cannot be achieved, four feet if against a fixed object.

5. The typical on-center spacing for the milled rumble stripe cuts is 12". Milled depth is 0.375" for "bicycle tolerable" stripes and 0.5 to 0.625" conventional shoulder rumble strips. The depth of the milled strips and stripes affects both the noise level transmitted to the motor vehicle operator when driving across the stripe and the degree of instability encountered by bicyclists.

6. Shoulder Rumble Stripes should have gaps to allow bicyclists to cross into or across the main travel lane without driving over the milled stripes. These gaps accommodate bicycle (1) left turns into driveways, (2) navigation to a proper left turn lane, (3) maintenance of a safe lane position, (4) passing of obstacles in the shoulder, and (5) passing of other bicyclists. A typical gap pattern is 48 feet of rumble stripe followed by a 12-foot gap.

7. In areas with wide shoulders, Centerline Rumble Strips generally have little effect on bicycling. Roads designated for "Centerline Rumble Strips" (CRS) and/or "Shoulder Rumble Strips (or Stripes)" (SRS) must meet certain criteria including usage, speed, design, and crash history of the road.

8. NH-DOT and all communities should keep bicycling in mind for all roadway projects. NHDOT should follow cost-effective "Best Practices" for roadways for all users.

9. The NH-DOT guidelines for rumble strips should be updated to include "bicycle tolerable" shoulder rumble stripes.

Thank you for your attention to the above recommendations toward updating the existing 2008 NHDOT rumble strip policy. If I may be of any other assistance please contact me.

Sincerely yours,

A handwritten signature in black ink that reads "Dave Topham". The signature is written in a cursive style with a large, stylized 'D' and 'T'.

Dave Topham
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